REMARKS

This amendment is responsive to the Office Action mailed November 29, 2001. Claims 52-57 remain pending in this application. In the Office Action, Claims 52-57 have been rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 5,399,497 -Kumar. Reconsideration and withdrawal of the rejection are requested for the reasons stated herein.

The apparatus of Kumar features a plurality of fluid conduits which are lined with an isolation liquid. Test packages, which comprise a plurality of liquid and air segments, are aspirated into a first fluid conduit. Each test package occupies a given length of the fluid conduit. As new test packages are moved into the first conduit, the previous test packages are gradually moved from the first conduit into a second conduit.

When one of the previous test packages reach a predetermined point in the second conduit, a valve is actuated and the test package is transferred to a third fluid conduit. During this operation, it is crucial that the test package be precisely positioned within the second conduit. Otherwise, the test package may be truncated by the valve. Thus, ideally, each test package should be the same length so that operation of the valve can be precisely timed.

Unfortunately, the length of the liquid segments of the test

packages vary. This is caused by variations in the surface tensions of the liquids which make up each liquid segment. Thus, each liquid segment interacts differently with the isolation liquid. (See Page 9, Lines 1-10 of the Specification). Thus, liquid segments having different physical properties will have different lengths. This adversely affects the length of the overall test packages, so that it may be out of position relative to the shear valve and other components.

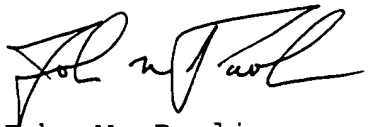
In order to solve this problem, the present invention employs methods and means that adjust the volume of the air segments, thus adjusting the overall length of the test packages. In addition, a feed back loop is employed in conjunction with the means for adjusting the volume so as to avoid adversely affecting the next successive test package. In this manner it is assured that the liquid segments are positioned a desired distance from the shear valve and other components before they are actuated.

These structures and methods are not disclosed or suggested by Kumar. Indeed, Kumar exhibits the very shortcomings which the present invention seeks to overcome. Thus, even if one of ordinary skill in the art were to combine Kumar with Young the apparatus and method of the present invention, as recited in claims 1 and 28 respectively, would not be obtained.

CONCLUSION

Every effort has been made to particularly and distinctly define the subject matter of the invention. The claims are definite, and are patentable over the prior art of record. For all the foregoing reasons, the differences between the invention and the prior art of record are such that the subject matter claimed as a whole would not have been known or obvious to a person of ordinary skill in the art. Reconsideration, and allowance of the pending claims, are respectfully requested.

Respectfully submitted,



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52. A method for controlling a stream of liquid and air segments, comprising:

selectively aspirating liquid segments and air segments into a first fluid conduit in a plurality of cycles, each cycle beginning with the aspiration of a first air segment and ending with the aspiration of a final air segment, said first and final air segments of each having a volume;

transferring the liquid segments and the air segments of each cycles from said first fluid conduit to a second fluid conduit;

adjusting the volume of the final air segment of each cycle after the final air segment has moved into said second fluid conduit;

transferring the liquid segments and the air segments of each cycle from said second fluid conduit to a third fluid conduit; and

adjusting the volume of the first air segment of each cycle after the first air segment has moved into said third fluid conduit wherein the volume of the final air segment is adjusted to equal an optimal volume; and

wherein said volume of the first air segment is adjusted according to a feedback loop.